

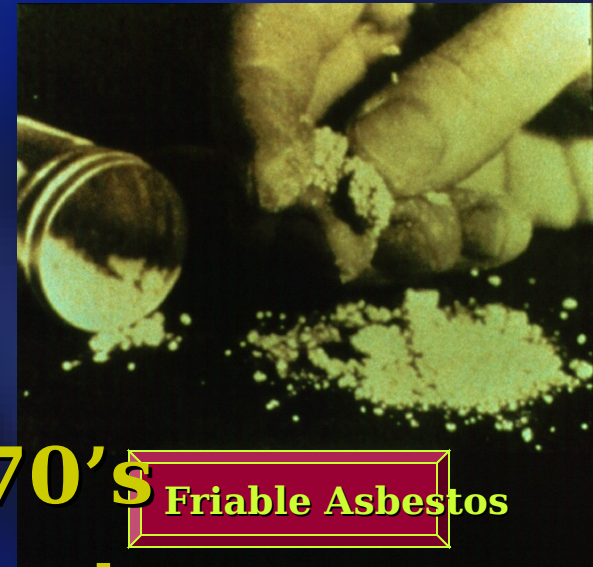
# **Asbestos Hazards and Exposure Control**

**LG #8**

# **A. Background**

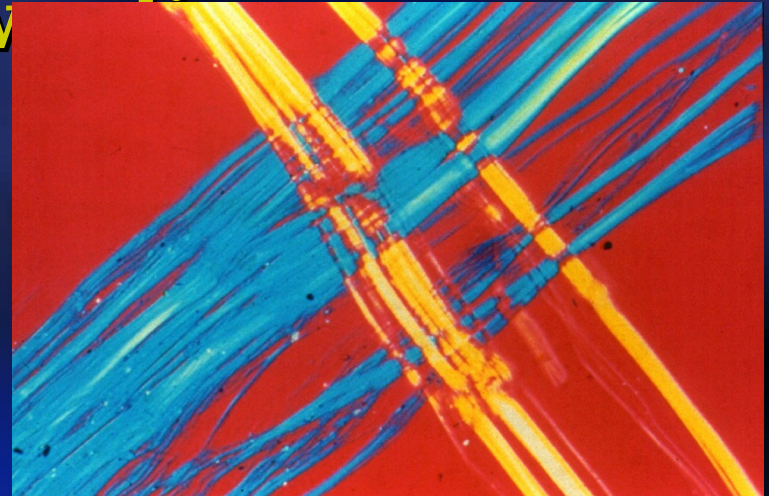
# Background Information on Asbestos

- ◆ Naturally occurring mineral
- ◆ Fibrous material:
  - ▢ Fireproof
  - ▢ High tensile strength
  - ▢ Good insulator
  - ▢ Chemically resistant
- ◆ Used in U.S. until 1970's
- ◆ OSHA set limits on dust exposure



# Health Hazards

- ◆ Small fibers can be inhaled into the lungs
- ◆ Fibers are known health hazards
- ◆ Fibers linked to two health states
  - ▢ Asbestosis
  - ▢ Cancer



Asbestos fibers under microscope

# Asbestos and Cancer

- ◆ Causal factor in lung cancer
- ◆ Causal factor in pleural mesothelioma
  - ▮ Rare cancer of lung lining
  - ▮ Always fatal
- ◆ Suspected of causing gastrointestinal cancers
- ◆ Smoking & asbestos work dramatically increase cancer risk

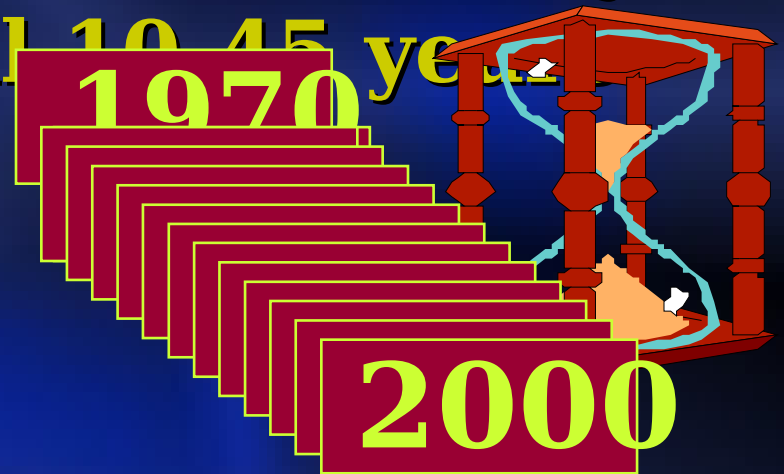


# Asbestos Health Effects

- ◆ No known acute (immediate/short-term) effects from asbestos exposure
- ◆ Asbestos related diseases may



p until 10-45 years  
sure



# **B. The Navy Asbestos Exposure Control Program**

# **Program Elements**

- ◆ **Identifying asbestos hazards**
- ◆ **Control of asbestos in the workplace**
- ◆ **Adherence to prescribed work practices**
- ◆ **Proper stowage and offloading of materials obtaining asbestos**



# **Program Elements (continued)**

- ◆ **Establishing an Asbestos Medical Surveillance Program (AMSP)**
- ◆ **Environmental Protection**
- ◆ **Training**

**Note: Chapter B1 of OPNAVINST 5100.19 (series) sets program policy**

# Program Purpose

- ◆ **To protect personnel who, through their job or in emergency situations, come into contact with asbestos. If they must handle asbestos, we must ensure they have the proper protection and training**

# **1. Identification of Asbestos**

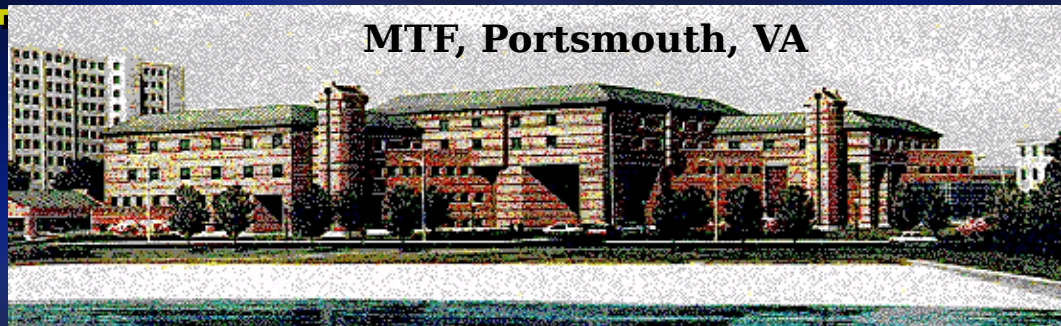
# Identification Information

- ◆ All thermal insulation on ships built prior to 1980 handled as if it contains asbestos
- ◆ Microscopic test--only way to determine if material contains asbestos
- ◆ DO NOT rely on special marking systems to identify asbestos-free insulation



# Identification Resources

- ◆ Aircraft carriers
- ◆ Tenders
- ◆ Naval Environmental Preventive Medicine Units (NEPMU)
- ◆ Medical



## **2. Control of Asbestos in the Workplace**

# **Command Responsibilities**

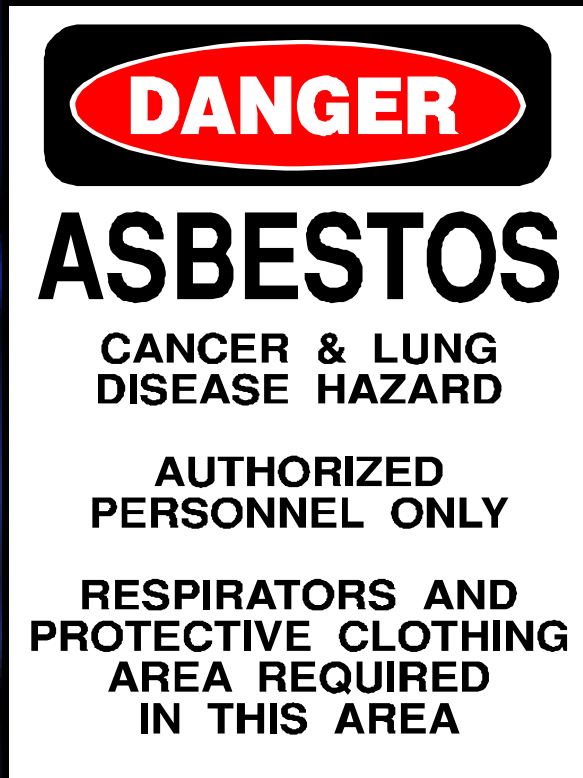
- ◆ **Installed asbestos (in good condition) shall NOT be removed for the sole purpose of eliminating asbestos**
- ◆ **When substitution not possible, engineering controls or PPE shall be used**
- ◆ **Administrative controls (personnel rotation) prohibited as means of keeping exposures below OSHA PEL**

# Warning Signs & Labels

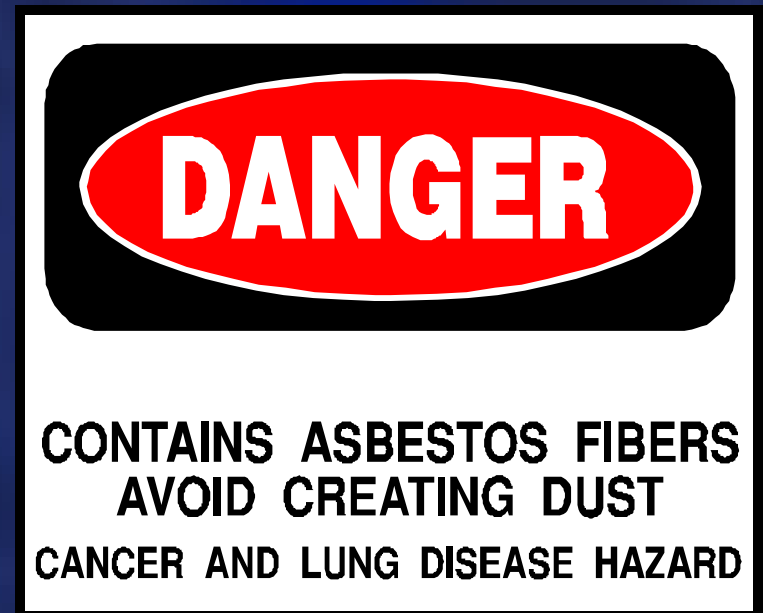
- ◆ **Must comply with OSHA requirements**
- ◆ **Posted at sufficient distances from work area**
- ◆ **Posted at each location where asbestos work performed**
- ◆ **Labels affixed to raw materials, scrap, waste, mixtures, debris, samples, or other products containing asbestos**



# Warning Signs & Labels



**Warning Sign**



**Warning Label**

# Asbestos Exposure Protocols

## ◆ Ship's Force

- ▮ Requirements & procedures for repair/removal of non-friable asbestos

## ◆ Emergency Asbestos Response Team

- ▮ Requirements & procedures for minor repair/removal of friable asbestos
- ▮ Limited to work accomplished within a glove bag



# Asbestos Exposure Protocols

## ◆ Intermediate Maintenance Activities

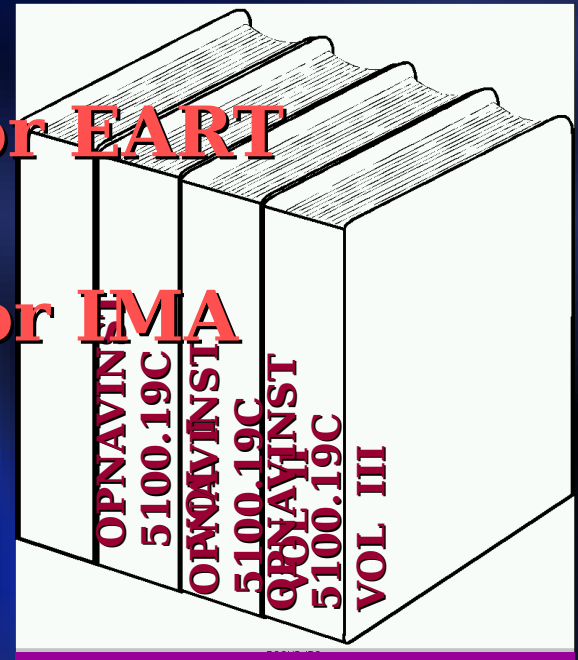
- ▢ Requirements & procedures for major asbestos removal
- ▢ Limited to IMA's with assigned IHO
- ▢ Details work that cannot be accomplished using single glove bag



### **3. Adherence to prescribed work practices**

# Work practices

- ◆ **OPNAVINST 5100.19 (series)**  
**details specific asbestos protocols**
  - ▢ **Appendix B1-B--SOP's for ship's force asbestos work**
  - ▢ **Appendix B1-C--SOP's for EART processes**
  - ▢ **Appendix B1-D--SOP's for IMA processes**



# **4. Asbestos Medical Surveillance Program (AMSP)**

# The Danger



- ◆ **Danger is in the dust**
- ◆ **Tiny fibers can cause asbestosis, lung cancer, mesothelioma**
- ◆ **Lungs are considered “target organs”**
- ◆ **Medical exams concentrate on potential lung problems**



# AMSP

- ◆ **Surveillance means tracking--to follow exposed personnel to see if symptoms or abnormalities**
- ◆ **Surveillance done on personnel**
  - ▢ **Previously exposed to asbestos**
  - ▢ **Currently assigned to asbestos teams**
- ◆ **Medical Dept. determines who is placed in AMSP**





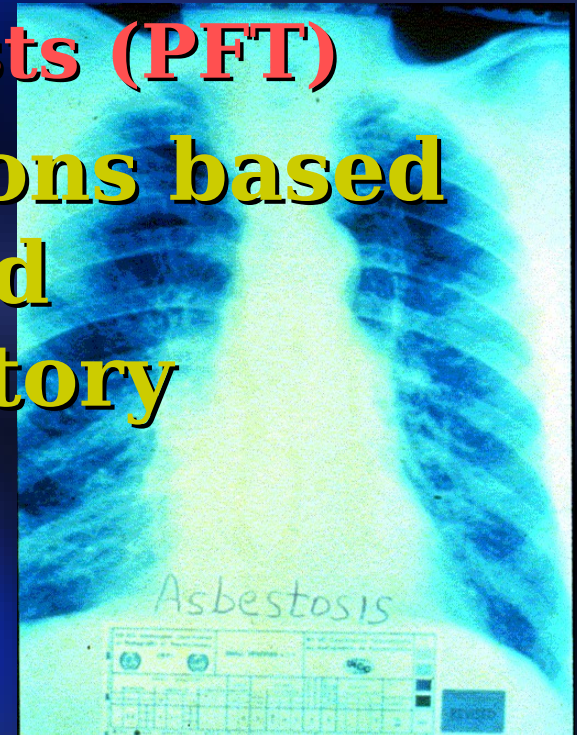
# AMSP

- ◆ Everyone completes surveillance questionnaire
- ◆ Assigned asbestos workers given pre-placement exam
- ◆ Asbestos workers get annual physicals



# AMSP

- ◆ **AMSP evaluations include**
  - ▢ **Chest x-rays**
  - ▢ **Pulmonary function tests (PFT)**
- ◆ **Frequency of evaluations based on individual's age and asbestos exposure history**



# **5. Proper Stowage and Offloading of Asbestos Containing Material (ACM)**

# ACM Stowage

- ◆ **Stow in heavy-duty (6-mil) plastic bags or other impermeable containers**
- ◆ **Storage material must be leak tight**
- ◆ **Containers must be provided with warning labels**
- ◆ **Exercise care to prevent bag or container rupture**

# ACM Waste and Offloading

- ◆ **Keep ACM WET during removal & disposal**
- ◆ **Dispose of in double plastic bags (6-mil) or other impermeable container**
- ◆ **Storage material must be leak tight**
- ◆ **Place warning labels on bags or containers, if not already labeled**

# ACM Waste and Offloading

- ◆ All asbestos waste containers distinctively color-coded RED
- ◆ Prevent bags and containers from rupturing
  - ▢ Don't overfill!
- ◆ Follow OPNAVINST 5100.19 (series), Chapter B3, Appendix B3-C instructions for handling and disposal

## **6. Environmental Protection**

- ◆ **Repair/removal operations conducted  $>3\text{nm}$  from shore**
- ◆ **EPA standards for ACM disposal apply upon return to port**
- ◆ **All ACM held for shore disposal**

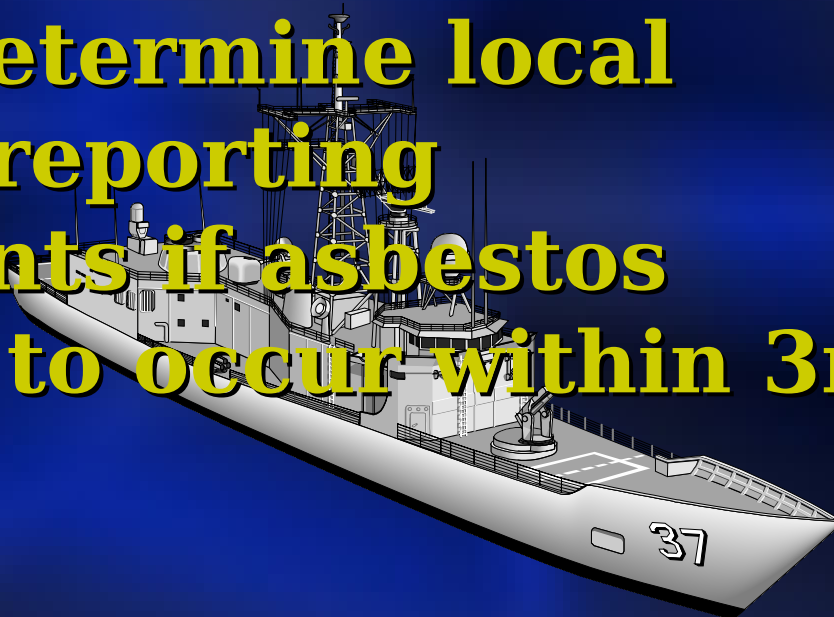


U.S. Environmental Protection Agency



# Environmental Protection

- ◆ Each ship should contact their TYCOM IHO or Regional Environmental Coordinator (REC) to determine local emissions reporting requirements if asbestos is to occur within 3nm re.

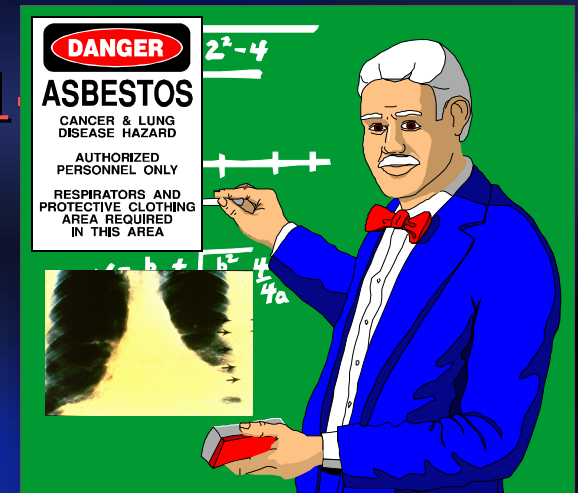




# **7. Training Requirements**

# Training

- ◆ Requirements in Appendices of OPNAVINST 5100.19 (series)
- ◆ Specific to type of work performed
- ◆ Each protocol contains specific training requirements
  - ▮ Ship's force--Appendix B1
  - ▮ EART--Appendix B1-F
  - ▮ IMA--Appendix B1-G



# **General Training**

- ◆ **In addition to specific protocol training**
- ◆ **Required for all personnel currently exposed, or with potential for being exposed to asbestos**
- ◆ **Training to be conducted by workcenter supervisor**

# **General Training Requirements**

## **◆ Topics shall include:**

- ▮ Health effects/hazards of asbestos**
- ▮ Association between use of tobacco products, asbestos exposure, & increased risk of developing lung cancer**
- ▮ Uses of asbestos which could result in exposure**
- ▮ Engineering controls and work practices associated with individual's work assignment**

# **General Training Requirements (continued)**

## **◆ Topics shall include:**

- ▮ Purpose, use, & limitations of PPE**
- ▮ Description of emergency & clean-up procedures**
- ▮ Posting signs and affixing labels**
- ▮ Review of OPNAVINST 5100.19 (series), Chapter B1, & command's control plan**